V12

VACUTRON® SUCTION REGULATOR

OPERATIONS & MAINTENANCE GUIDE

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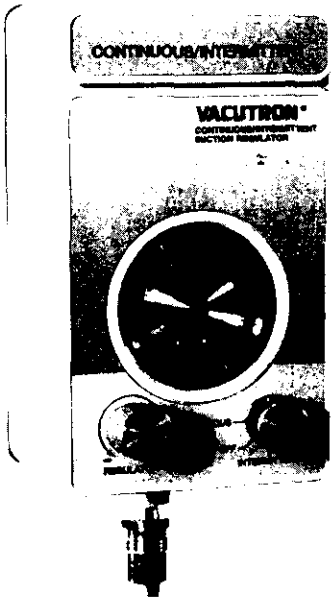
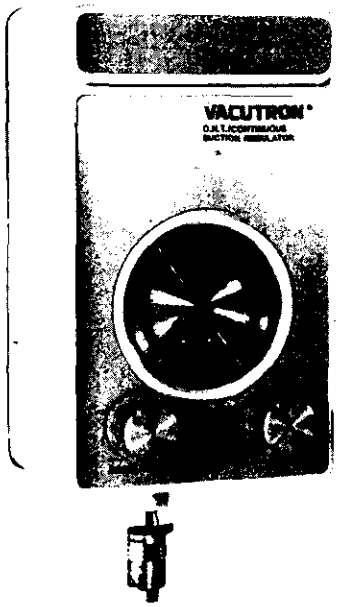
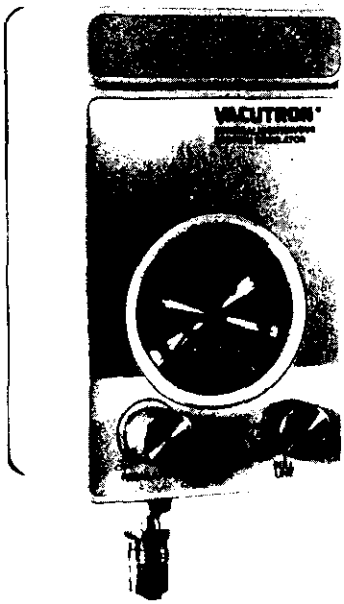


CONTINUOUS/INTERMITTENT



GENERAL PATIENT REGUGAGE (ONT)

INTERMITTENT



SURGICAL REGUGAGE

ORDERING INFORMATION

IVR/CONT — Without Fittings ⅛ NPT Female Inlet/Outlet 22-05-0500
IVR — Without Fittings ⅛ NPT Female Inlet/Outlet 22-06-0500

VACUTRON MODEL	INLET / OUTLET	SERRATED HOSE STEM	CHEMETRON Q/C RECT.	CHEMETRON Q/C ROUND	DISS FEMALE	⅛ NPT FEMALE	EXTENSION 1¼x⅛ NPT	OHMEDA DIAMOND	PURITAN	OXEQUIP MEDSTAR
CONTINUOUS INTERMITTENT	DISS MALE	22-05-0509	22-05-0512	22-05-0513	22-05-0514	22-05-0523	22-05-0524	22-05-0516	22-05-0510	22-05-0522
	VA MALE	22-05-0511			22-05-0515					
	BARBED HOSE STEM	22-05-0539	22-05-0532		22-05-0534	22-05-0540	22-05-0550	22-05-0536	22-05-0530	22-05-0542
INTERMITTENT	DISS MALE	22-06-0509	22-06-0512	22-06-0513	22-06-0514	22-06-0523	22-06-0524	22-06-0516	22-06-0510	22-06-0522
	VA MALE	22-06-0511			22-06-0515					
	BARBED HOSE STEM	22-06-0539	22-06-0532		22-06-0534	22-06-0540	22-06-0550	22-06-0536	22-06-0530	22-06-0542

VACUTRON MODEL	INLET / OUTLET	SERRATED HOSE STEM	CHEMETRON Q/C RECT.	CHEMETRON Q/C ROUND	DISS FEMALE	⅛ NPT FEMALE	EXTENSION 1⅛x⅛ NPT	OHMEDA DIAMOND	PURITAN	OXEQUIP MEDSTAR	CHEM. CEILING COLUMN ADAPTOR
SURGERY	DISS MALE	22-04-0009	22-04-0012	22-04-0013	22-04-0014	22-04-0201	22-04-0211	22-04-0019	22-04-0010	22-04-0025	22-04-0205
	VA MALE	22-04-0011			22-04-0015						
	BARBED HOSE STEM	22-04-0209	22-04-0212		22-04-0214	22-04-0230	22-04-0221	22-04-0219	22-04-0240	22-04-0225	22-04-0235
	45° DISS MALE	22-04-0204									
ONT	DISS MALE	22-04-0001	22-04-0002	22-04-0003	22-04-0004	22-04-0200	22-04-0210	22-04-0008	22-04-0005	22-04-0022	
	VA MALE	22-04-0006			22-04-0007						
	BARBED HOSE STEM	22-04-0109	22-04-0112		22-04-0104	22-04-0102	22-04-0120	22-04-0108	22-04-0105	22-04-0122	

INDEX

Section	Page
1.0 General Information	3
1.1 Description	3
1.2 Features	3
1.3 User Responsibilities	3
1.4 Precautions	3
2.0 Models	4
3.0 Specifications (general)	4
3.9 Specifications (by model)	4
4.0 Assembly and Set Up (IVR & IVR/Cont.)	5
4.1 With Chemetron Quick Connect Adapter	5
4.2 With Chemetron Bottle Holder Adapter	5
4.3 With Chemetron Q.C. Adapter And Barbed Stem	5
5.0 Operating Procedures	5
5.1 Intermittent Operation	5
5.2 Continuous Operation	6
5.3 Off Position	6
5.4 Correcting Vacuum Levels	6
5.5 Correction table	6
5.6 Patient Connection	6
6.0 Assembly and Set Up (General Patient)	7
6.1 With Chemetron Bottle Holder Adapter	7
6.2 With Chemetron Q.C. Adapter And Barbed Stem	7
7.0 Operating Procedures	7
7.1 Regulated Vacuum	7
7.2 Off Position	7
8.0 Assembly and Set Up (Surgery)	8
8.1 With Ceiling Column Chemetron Quick Connect	8
8.2 With O.R. Suction Cart	8
9.0 Operating Procedures	8
9.1 Regulated Vacuum	8
9.2 Full Line	8
9.3 Off Position	8
10.0 Maintenance and Service	9
10.1 Mode Selector Switch	9
10.2 Safety Relief Valves	9
10.3 Timing Motor Sub-Assembly	9
10.4 Ceramic Valve	9
10.5 Regulator Control/First Stage	9
10.6 Regulator Control/Second Stage	9
10.7 Timing Control Needle Valves	9
10.8 Vacuum Gage	10
10.9 Sterilization	10
10.10 Flushing	10
10.11 Calibration tests	10
11.0 Trouble Shooting Guide	11
12.0 Vacutron Suction Regulator (drawing)	12
13.0 Replacements Parts List	13

1.0 GENERAL INFORMATION

1.1 *Description*

Five modes are available; "INTERMITTENT," "CONTINUOUS," "REGULATED VACUUM," "FULL LINE" and "OFF". Up to three modes are available on an individual model depending on the one chosen. A selector knob allows the practitioner to change the operation mode of the Vacutron vacuum regulator as the need arises.

1.1.1 The Intermittent Vacuum Regulators (IVR and IVR/Cont.) *are utilized on a central piped vacuum system* for controlled, safe removal of secretions generated by a patient as a result of either physiological malfunctions or directly related to post-operate complications. Safety relief valves prevent accidental full line suction. The "INTERMITTENT" mode cycles the regulated vacuum for procedures such as evacuation of semi-solids, liquids and gases from post-operative stomach or intestinal tract. The vacuum level in both units can be regulated from 0 to 150 mm Hg (nominal) in the "INTERMITTENT" mode. The IVR/Cont. model can be regulated from 0 to 200 mm Hg (nominal) in the "CONTINUOUS" mode.

1.1.2 The General Patient (O.N.T.) and Surgical Vacutron are utilized on central piped systems for controlled, safe removal of secretions generated by a patient as a result of either physiological malfunctions or directly related to post-operative complications. The General Patient Vacutron is a continuous flow vacuum regulator that has a range from 0 to 200 mm Hg (nominal). The Surgical Vacutron controls the vacuum from 0 to 300 mm Hg (nominal) in the "REGULATED VACUUM" mode and whatever the central piped system will handle in the "FULL LINE" mode. The General Patient Vacutron safety relief valve prevents accidental full line suction. The Surgical Vacutron has no relief valves.

NOTE: Use standard procedures to test the unit to make sure it has not drifted because of damage or contamination. The performance and design specifications for each model are in section 3. Calibration tests are recommended at least annually.

1.2 **Features**

- Safety relief valves
- Can be cleaned and flushed with disinfectant
- Color coded 0–300 mm Hg vacuum gauge
- Accurate vacuum control
- Impact resistant housing
- Minimum maintenance
- 9 LPM controlled flow in "INTERMITTENT"
- Quiet operation

1.3 **User Responsibilities**

Federal law and warranty limitations require that you:

- Install, operate and maintain the unit as instructed.
- During use check for proper operation periodically.
- Never use a defective unit under any circumstances.
- Obtain repairs and/or replacement as instructed in this manual.

This unit or any of its parts should not be repaired or replaced other than in accordance with written instructions from Chemetron. No alteration or modification is permitted without specific written instructions from Chemetron and strict compliance thereof. The user of this unit shall have the sole responsibilities for any malfunction and patient harm which results from improper use, faulty maintenance, improper repair, damage or unauthorized alteration.

1.4 *Precautions*

DO:

- Read all instructions.
- Check timing (IVR only) and vacuum levels periodically.
- Sterilize with cold liquid disinfectant, dry and check functions per manual.

DON'T:

- Never use a malfunctioning unit.
- Don't sterilize by liquid immersion or steam autoclave.
- Don't attempt to repair the unit without specific instructions.

CAUTION: Never connect to or use on a patient without checking the vacuum level and checking the set up (the correct items connected in the correct manor).

2.0 MODELS

Vacutron vacuum regulators models and fittings available

Catalog Number					
O.N.T.	Surgical	IVR/Cont.	IVR	Type Inlet	Type Outlet
N/A	N/A	22-05-0500	22-06-0500	1/8" NPT Female (no fittings)	1/8" NPT Female
22-04-0001	22-04-0009	22-05-0109	22-06-0109	Serrated Hose Stem	DISS Male
22-04-0510	22-04-0510	22-05-0510	22-06-0110	Puritan Adapter	DISS MALE
22-04-0511	22-04-0511	22-05-0511	22-06-0111	Serrated Hose Stem	VA Male
22-04-0002	22-04-0012	22-05-0012	22-06-0112	Chemetron Quick Connect Adapter with Rectangular Striker	DISS Male
22-04-0513	22-04-0513	22-05-0513	22-06-0113	Chemetron Quick Connect Adapter with Round Striker	DISS Male
22-04-0514	22-04-0514	22-05-0514	22-06-0114	DISS Female	DISS Male
22-04-0515	22-04-0515	22-05-0515	22-06-0115	DISS Female	VA Male
22-04-0516	22-04-0516	22-05-0516	22-06-0116	Ohio Diamond Adapter	DISS Male
22-04-0522	22-04-0522	22-05-0522	22-06-0122	MED*STAR Adapter (Oxequip)	DISS Male
22-04-0523	22-04-0523	22-05-0523	22-06-0123	1/8" NPT Female (no inlet fitting)	DISS Male
22-04-0524	22-04-0524	22-05-0524	22-06-0124	Extension, 1 1/4" long, 1/8" NPT Female	DISS Male
N/A	22-04-0204	N/A	N/A	Serrated Hose Stem	45° DISS Male
N/A	22-04-0205	N/A	N/A	Chemetron Quick Connect With Ceiling Column Adapter	DISS Male

3.0 SPECIFICATIONS

(general)

3.1 **Operation line vacuum range** — 12" to 28" Hg. (Unit calibrated at 18" Hg source vacuum)

3.2 **Overall Dimensions** — Height 7", Width 4", Depth 5"

3.3 **Weight** — 2.1 lbs.

3.4 **Vacuum Gauge**

— Calibrated: 0–300 mm Hg (increments of 10 mm Hg)
0–40 kPa (increments of 1 kPa)
— 2 1/2 Gauge Face
— Diaphragm Type

3.5 **Materials of Construction**

Case — High Impact Polycarbonate
Knobs — Plated Aluminum
Internal parts — Acetal Resin
Metal Parts — Brass, Stainless, Plated Steel

3.6 **Operating Temperature**

Range — 35 degrees F to 120 degrees F

3.7 **Operating Humidity**

Range — 10 to 95% R.H. noncondensing

3.8 **Timing Mode (independently adjustable)**
— On: 3 sec. to 30 seconds
— Off: 3 sec. to 30 seconds

Factory setting
— On: 17 seconds + 3 to − 2 seconds
— Off: 9 seconds + 3 to − 2 seconds

3.9 SPECIFICATIONS

(by model)

		O.N.T.	Surgical	IVR/Cont.	IVR
Selector Switch modes	"CONTINUOUS"	—	—	X	—
	"INTERMITTENT"	—	—	X	X
	"REGULATED VACUUM"	X	X	—	—
	"FULL LINE"	—	X	—	—
	"OFF"	X	X	X	X
Operating Range (± 10 mm Hg)	"CONTINUOUS"	N/A	N/A	0–230 mm Hg	N/A
	"INTERMITTENT"	N/A	N/A	0–150 mm Hg	0–150 mm Hg
	"REGULATED VACUUM"	0–200 mm Hg	0–300 mm Hg	N/A	N/A
	"FULL LINE"	N/A	MAX. AVAIL.	N/A	N/A
Maximum Flow, regulator only (Nominal)	"CONTINUOUS"	N/A	N/A	80 LPM	N/A
	"INTERMITTENT"	N/A	N/A	9 LPM	9 LPM
	"REGULATED VACUUM"	80 LPM	80 LPM	N/A	N/A
	"FULL LINE"	N/A	MAX. AVAIL.	N/A	N/A
Safety relief Valves (Not to exceed)	"CONTINUOUS"	N/A	N/A	240 mm Hg	N/A
	"INTERMITTENT"	N/A	N/A	160 mm Hg	160 mm Hg
	"REGULATED VACUUM"	240 mm Hg	N/A	N/A	N/A

4.0 ASSEMBLY AND SET UP

4.1 **With Chemetron Quick Connect Adapter:**

4.1.1 Remove the IVR or IVR Continuous Vacutron from its shipping container. Attach a suction collection bottle with female swivel nut fitting on the cap, to the bottom of the unit (see Fig. 1). It is recommended that a 1-2 gallon or smaller bottle be suspended on walls or columns. Insert Chemetron quick connect adapter into Chemetron outlet station until latching occurs.

4.1.2 Add appropriate suction tubing and or suction catheter to patient port of collection bottle. You are now ready to set the unit (see section 5.0).

4.2 **With Chemetron Bottle Holder Adapter, One Or Two Outlets:**

4.2.1 Attach a suction bottle with female swivel nut fitting on the cap to the bottom of the unit.

4.2.2 Insert Chemetron bottle holder adapter underneath locking nut on the cap assembly's vacuum port. Tighten down securely. Attach a vacuum connecting hose from the serrated barb on the back of the regulator to one of the slide valves (see Fig. 2).

4.2.3 Insert Chemetron bottle holder adapter into Chemetron outlet station until latching occurs. Push slide valve in to make vacuum available to the unit. You are now ready to set the unit (see section 5.0).

4.3 **With Chemetron Quick Connect Adapter Inlet And Barbed Stem Outlet:**

4.3.1 Insert Chemetron quick connect adapter into Chemetron outlet station until latching occurs. Screw the Chemetron DISS vacuum nut and stem (cat. #15-90-0002) onto male DISS outlet connection.

4.3.2 Using Chemetron Cat. No. 22-11-0004 Bottle Holder, insert into wall bottle holder bracket and then attach Chemetron collection bottle as outlined in 4.2.1. Attach a hose from the serrated barb on the bottom of the regulator to the vacuum port of the collection bottle (see Fig. 3). You are now ready to set the unit (see section 5.0).

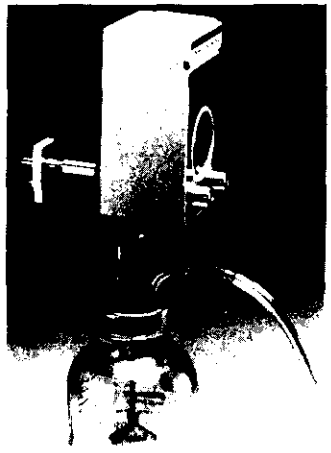


FIGURE 1

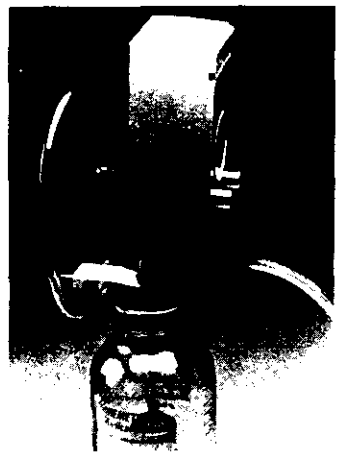


FIGURE 2

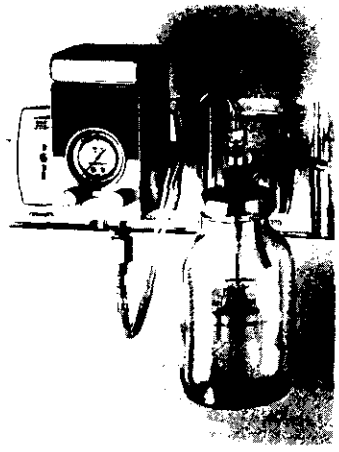


FIGURE 3

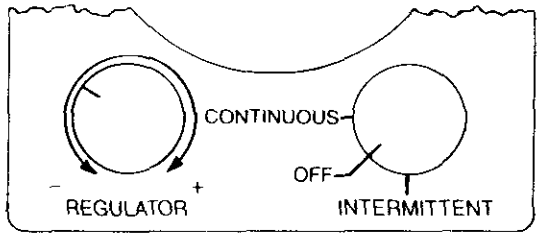


FIGURE 4

5.0 OPERATION PROCEDURE

5.1 **Intermittent Operation**

5.1.1 Turn selector knob (lower right) from "OFF" position to the "INTERMITTENT" POSITION (see Fig. 4). Occlude the suction tubing so there is no flow of air. The unit will start up in the "OFF" phase of the cycle. Wait the 7 to 12 sec. for the "ON" cycle to start.

5.1.2 Adjust vacuum level knob (lower left) to the maximum vacuum required. Remove occlusion from tubing.

8.0 ASSEMBLY AND SET UP

8.1 **With Direct Ceiling Column Chemetron Quick Connect Adapter:**

8.1.1 Remove the Surgical Vacutron from its shipping container. Attach a suction collection bottle with female swivel nut fitting on the cap, to the bottom of the unit (see Fig. 10). It is recommended that a 1/2 gallon or smaller bottle be used when mounting on walls or columns. Insert Chemetron quick connect adapter into Chemetron outlet station on the ceiling column until latching occurs.

8.2.1 Remove the Surgical Vacutron, Cart, etc. from its shipping container. Assemble the Vacutron, Cart, hoses, etc. per enclosed instruction sheet (see Fig. 11).

8.2 **With O.R. Suction Cart:**

8.2.1 Remove the Surgical Vacutron, Cart, etc. from its shipping container. Assemble the Vacutron, cart, hoses, etc. per enclosed instruction sheet (see FIG. 11).

8.2.2 Connect the hose to back (inlet) of the Vacutron. Insert the other end with, a Chemetron quick connect adapter, into Chemetron outlet station until latching occurs.

8.2.3 Put the collection bottles or DCUs in place and connect them in series with the appropriate hose.

8.2.4 Add appropriate suction tubing and/or suction catheter to patient port of the collection bottle or DCU. You are now ready to set the unit (see section 9.0).

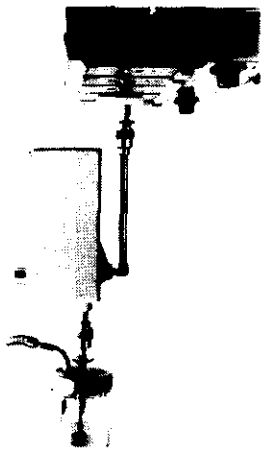


FIGURE 10

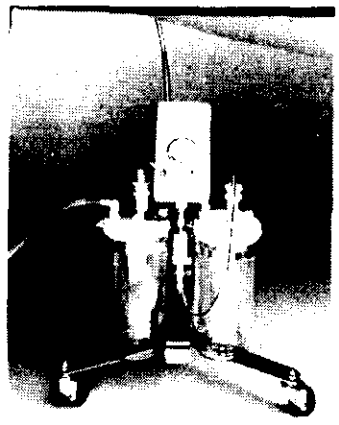


FIGURE 11

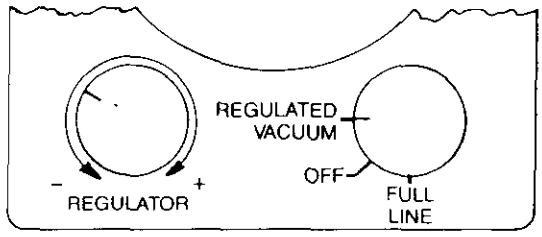


FIGURE 12

9.0 OPERATION PROCEDURE

9.1 **REGULATED VACUUM**

9.1.1 If regulated flow is required, turn selector knob (lower right) to the "REGULATED VACUUM" mode (see Fig. 12). Occlude the suction tubing so there is no flow of air.

9.1.2 Adjust regulator knob (lower left) to the maximum vacuum required. Remove occlusion from tubing.

9.1.3 In some procedures flow rate is more important than vacuum level. In this case, do not occlude the suction tubing to the patient. Adjust the regulator knob (lower left) until the flow rate required is reached.

Regulator and collection bottle(s) or DCU(s) are now ready for use in the "REGULATED VACUUM" mode.

9.2 **FULL LINE**

9.2.1 If maximum flow is required, turn selector knob (lower right) to the "FULL LINE" mode.

9.2.2 This mode can only be turned on or off. There is no vacuum regulation. This mode will deliver the maximum vacuum and flow for this set up.

Regulator and collection bottle(s) or DCU(s) are now ready for use in the "FULL LINE" mode.

9.3 **"OFF" Position**

9.3.1 If the selector knob (lower right) is turned to the "OFF" position, after use in "REGULATED VACUUM" mode, both the patient and collection bottle/DCU will vent back to ambient (vacuum free). The unit, in the "OFF" position, can remain attached to hospital vacuum supply indefinitely.

9.3.2 To resume suction, turn the selector knob to the "REGULATED VACUUM" mode. The vacuum level and/or flow rate will return to the previous setting.

9.3.3 Some physicians prefer that the regulator knob (lower left) be turned counterclockwise until the air flow stops, then the selector knob (lower right) turned to the "OFF" position.

10.0 MAINTENANCE AND SERVICE

NOTE: Figs. are identified by () & models are identified by []

10.1 **Mode Selector Switch (Fig. 13) [All models]**

Under most circumstances, this sub-assembly need not be taken apart. Normally, failure from contamination will occur last in the mode selector switch. If a leak is suspected in this area, or assembly, remove operating stem (Fig. 12) and single screw in center of mode selector switch. Lift switch from post, clean and/or replace "O" rings and switch. Assemble and test for function per section 5.0.

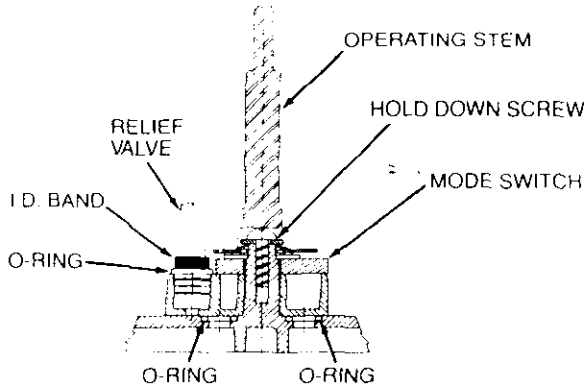


FIGURE 13

10.2 **Safety Relief Valves [IVR, IVR/Cont., O.N.T.]**

10.2.1 See the Table 3.9 on page 4 to determine the safety relief valve(s) supplied with your Vacutron. All safety relief valve(s) are properly calibrated at the factory. It is not recommended that you attempt to repair or adjust.

10.2.2 If you suspect malfunction, replace with a new relief valve (Fig. 13). Since the relief valve is held in place by the friction of its O-ring, you can remove it by pulling straight up out of the mode switch housing. Check the I.D. band to be certain that you are replacing the faulty safety relief valve with the correct valve for your unit.

10.3 **Timing Motor Sub-Assembly [IVR, IVR/Cont.]**

10.3.1 The timing motor sub-assembly (Fig. 14) is not in the patient drainage flow path. Under most circumstances, even if the unit has been clogged with contaminant, it is unnecessary to clean the Timing Motor. The flushing procedure, shown in sec. 10.10, will alleviate most clogs.

10.3.2 If replacement is needed, remove "E" ring and washer and two springs. Remove three screws holding time motor housing to base (Fig. 14).

10.3.3 Clean and/or replace assembly. Test for function per section 5.0.

10.4 **Ceramic Valve [IVR, IVR/Cont.]**

A persistent clog may occur in the ceramic switch valve (Fig. 14). If this is suspected, remove the "E" ring, washer and tension spring to inspect the valve. Make sure both surfaces and all air flow openings are entirely clear of contaminant. Wipe contacting surfaces of ceramic valve with isopropyl alcohol before reassembly. Replace ceramic switch in its original position with tension spring, washer and "E" ring. Test for function per section 5.0.

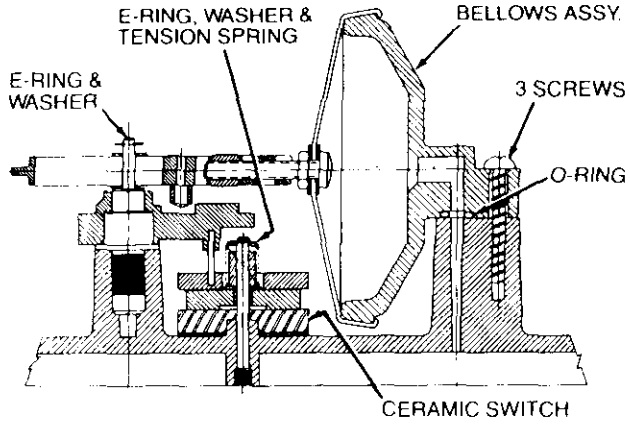


FIGURE 14

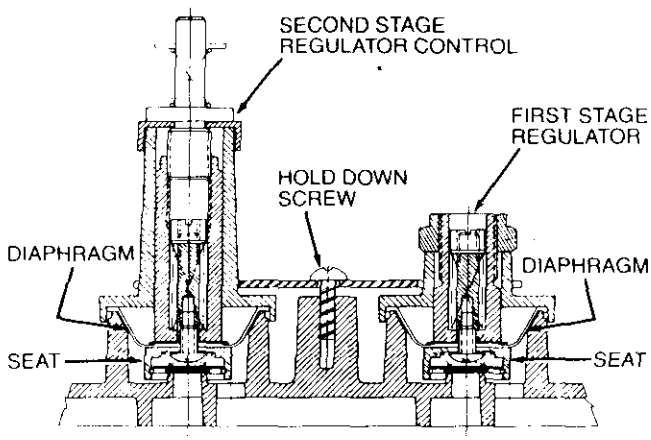


FIGURE 15

10.5 **Regulator Control/First Stage [IVR, IVR/Cont.]**

The first stage regulator (Fig. 15) is factory set to 310 +/- 10 mm Hg. It is not recommended that you attempt to change this setting. If you suspect improper function, remove the hold down screw (Fig. 15). Lift the regulator from its seat. Inspect for contamination. Clean or replace with new assembly. Assemble and test for function per section 5.0 or 7.0.

10.6 **Regulator Control/Second Stage [All models]**

The second stage regulator (Fig. 15) adjusts the vacuum level to the patient in all modes except "FULL LINE." If contaminant enters the unit, remove the hold down screw (Fig. 15). Lift the regulator from its seat. Inspect for contamination. Clean or replace it with a new assembly. If its rubber diaphragm is defective, replace it with a new assembly. Assemble and test for function per section 5.0, 7.0 or 9.0.

10.7 **Timing Control Needle Valves [IVR, IVR/Cont.]**

10.7.1 The timing control needle valves are not in the patient drainage flow path. Under most circumstances, even if the unit has been clogged, it is unnecessary to clean them.

10.7.2 If cleaning is necessary, both needle valves are removed in the same manner. Open cover (Fig. 11) and rotate the needle valve counterclockwise pulling out at same time (Fig. 15). This will remove the needle valve only, leaving the valve body in place. After needle valve has been removed, wipe the tip with isopropyl alcohol.

10.7.3 Carefully reassemble. Turn both timing controls clockwise until they stop. Then turn counterclockwise one and one half turns. Now repeat Section 5.1.3 for desired setting.

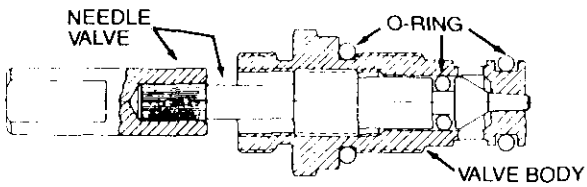


FIGURE 16

10.8 **Vacuum Gauge [All models]**

10.8.1 If the vacuum gauge does not read zero (pointer not in the black band), then remove the cover. To remove the gauge, pull straight outward away from the unit's body. The gauge is a slip fit (no threads or screws holding it down). When you look at the back of the gauge you should see a small orifice recessed an 1/8 in. If it is clogged, use a cottonswab soaked in isopropyl alcohol to remove the clog. Wipe the area dry with a new, dry cotton swab. Reassemble and test. If the gauge problem persists, then replace the gauge.

10.8.2 If, under normal use, the pointer is always in the black band (zero), or shows weak or erratic readings, then flush per section 10.10. If this does not correct the problem, then follow the instructions in section 10.8.1. If this does not correct the problem, then replace the gauge.

10.8.3 If the Vacutron has been dropped, be sure to check the gauge for proper function. Replace the gauge if necessary. If the gauge has been dropped or any part bent or tampered with, then replace the gauge.

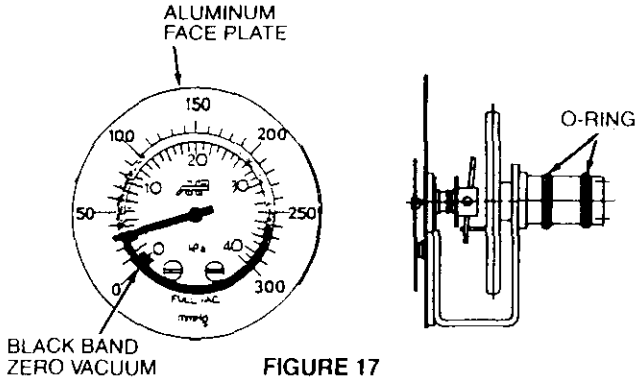


FIGURE 17

10.9 **Sterilization [All models]**

10.9.1 Attach a length of vacuum hose from the inlet of the Vacutron to the patient port of a large collection bottle. Attach one end of a length of hose to the source vacuum and the other end to outlet port of the large collection bottle. The collection bottle will collect the cold liquid sterilant and keep it out of the hospital's vacuum system (Fig. 18). Place the patient port of Vacutron into a shallow pan containing the cold liquid sterilant (such as Cidex).

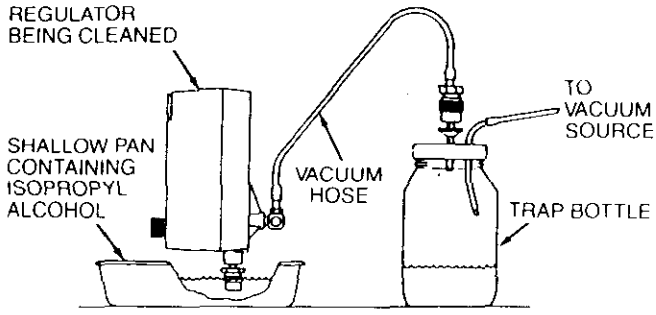


FIGURE 18

10.9.2 Activate the source vacuum. Turn the unit on and turn the adjustable regulator (lower left knob) clockwise as far as it will go for maximum flow. Pull approximately 100 cc of cold liquid sterilant through the unit. Do this for all modes available on your Vacutron. Be careful not to overflow the collection bottle. Turn the mode switch to "OFF."

10.9.3 The cold liquid sterilant needs to be flushed out of the unit. See section 10.10.

10.9.4 ETO (ethylene oxide) is not recommended as a standard procedure. Sterilization with ethylene oxide mixtures may cause "crazing" (small surface cracks) of some of the plastic parts. Following sterilization with ethylene oxide, parts should be quarantined in a well ventilated area to allow dissipation of residual ethylene oxide gas absorbed by the material.

CAUTION:
DO NOT STEAM AUTOCLAVE OR LIQUID IMMERSE ANY VACUTRON SUCTION REGULATOR.
Severe impairment of the units operation will result.

10.10 **Flushing [All models]**

10.10.1 Attach a length of vacuum hose from the inlet of the Vacutron to the patient port of a large collection bottle. Attach one end of a length of hose to the source vacuum and the other end to outlet port of the large collection bottle. The collection bottle will collect the cold liquid sterilant and keep it out of the hospital's vacuum system (Fig. 18).

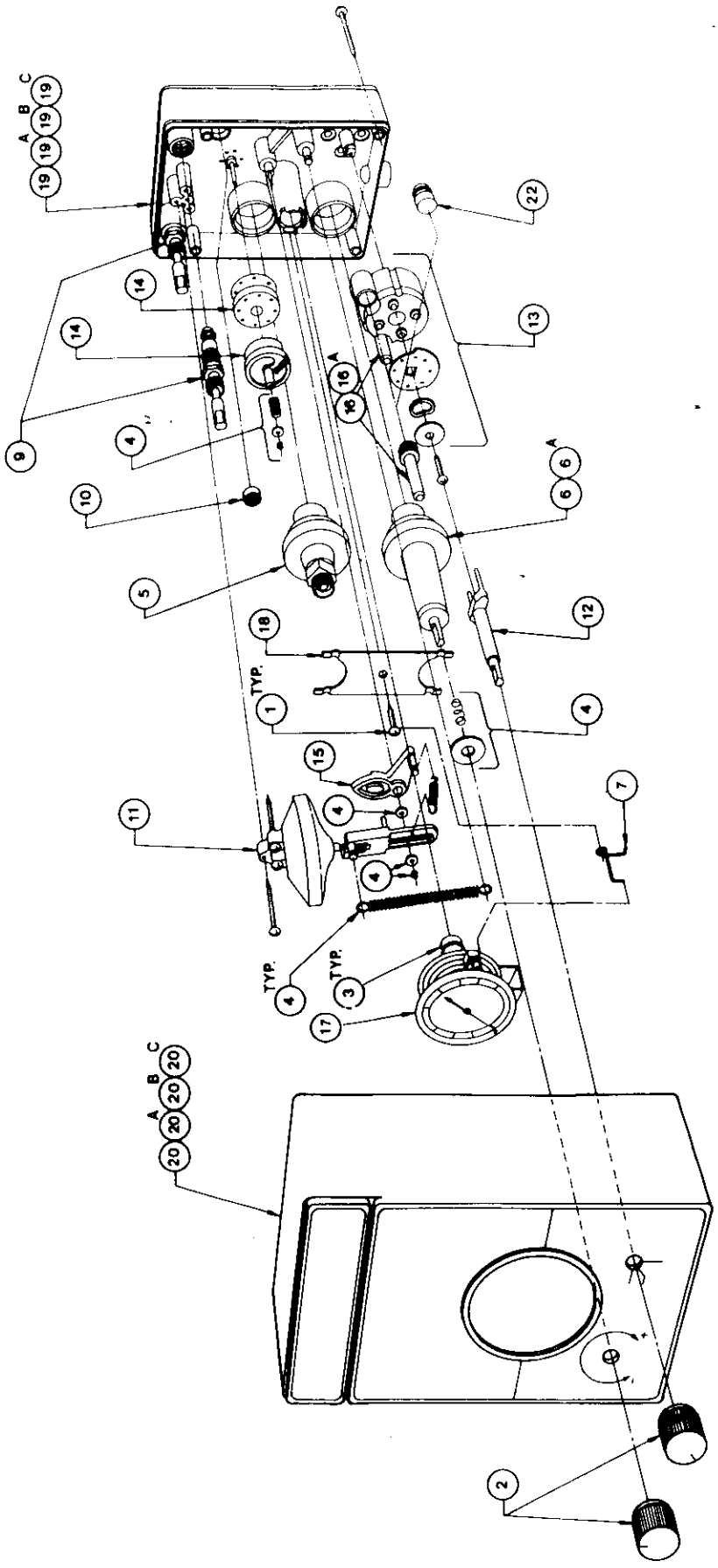
10.10.2 Place the patient port of Vacutron into a shallow pan containing the Isopropyl Alcohol. Activate the source vacuum. Turn the unit on and turn the adjustable regulator (lower left knob) clockwise as far as it will go for maximum flow. Pull approximately 100 cc of the Isopropyl Alcohol through the unit. Do this for all modes available on your Vacutron. Be careful not to overflow the collection bottle.

10.10.3 Operate the unit at maximum vacuum (and flow) for about 30 minutes with the patient port open to the atmosphere to dry out the internal passageways. Do this for all modes available on your Vacutron.

10.11 **Calibration tests [All models]**

Whenever parts have been repaired or replaced the unit must be recalibrated so that it will perform according to section 3.0 before being used on a patient.

12.0 VACUTRON SUCTION REGULATOR



KIT No.	TITLE	DESCRIPTION	PIECES PER KIT	CATALOG No. BY VACUTRON MODEL			
				IVR	IVR/Cont.	O.N.T.	Surgery
1	Screw kit	Contains (3) sizes of self tapping screws	9	22-95-0001	22-95-0001	22-95-0001	22-95-0001
2	Knob kit	Knurled aluminum knobs	2	22-95-0002	22-95-0002	22-95-0002	22-95-0002
3	"O" ring kit	Contains (5) sizes of "O" rings	16	22-95-0003	22-95-0003	22-95-0003	22-95-0003
4	Spring kit	All extension, compression, "E" rings and spring related washers	6	22-95-0004	22-95-0004	N/A	N/A
5	Fixed regulator kit	Fixed regulator assembly	1	22-95-0005	22-95-0005	N/A	N/A
6	Adj. regulator kit	Adjustable regulator assembly	1	22-95-0006	22-95-0006	22-95-0006	22-95-0023
7	Spring clip kit	Gauge hold-down wire	5	22-95-0038	22-95-0038	22-95-0038	22-95-0038
9	Timing control kit	Needle valve assembly	2	22-95-0009	22-95-0009	N/A	N/A
10	Filter kit	Porous plastic filter	6	22-95-0010	22-95-0010	N/A	N/A
11	Diaphragm kit	Timing motor diaphragm and link assembly	1	22-95-0011	22-95-0011	N/A	N/A
12	Operating stem kit	Plastic operating stem for mode switch	1	22-95-0012	22-95-0012	22-95-0012	22-95-0012
13	Vacuum switch kit	Plastic mode switch with detent plate, flat spring and washer	4	22-95-0013	22-95-0013	22-95-0013	22-95-0013
13a	Lubricant, 1 oz. kit	1 oz. jar of OTLT lubricant for vacuum switch & gauge "O" rings	1	64-90-2111	64-90-2111	64-90-2111	64-90-2111
14	Six port switch kit	Six port ceramic switch	3	22-95-0014	22-95-0014	N/A	N/A
15	Lever assembly, kit	Lever assembly with flat washer	2	22-95-0015	22-95-0015	N/A	N/A
16	Relief valve kit	Relief valve, continuous (red band)	1	N/A	22-95-0016	22-95-0016	N/A
16A	Relief valve kit	Relief valve, intermittent (black band)	1	22-95-0021	22-95-0021	N/A	N/A
17	Gauge kit	Vacuum gauge, 0–300 mm Hg	1	22-95-0017	22-95-0017	22-95-0017	22-95-0017
18	Reg. hold-down kit	Sheet metal hold down regulator clamp and wire hold down for gauge	2	22-95-0018	22-95-0018	22-95-0018	22-95-0018
19	Base kit	Base, 12–14 tapped, with inserts	1	22-95-1005	22-95-1002	22-95-1004	22-95-1003
20	Cover kit	Cover assembly, with labels	1	22-95-0026	22-95-0020	22-95-0028	22-95-0027
22	Plug	Metal plug with "O" ring	2	N/A	N/A	N/A	22-95-0029